

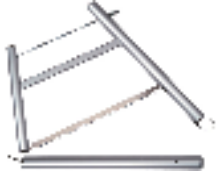


## Objective:

The objective of this workshop guide is for the Scout Leader and/or Scout youth to be able to describe and demonstrate safe use of the Saw for Scout use.

## Common types of Saws found in Scouting?

There are typically three types of saws that are found in scouting. **Buck Saws, Bow Saws** and **pocket knife saws**.



A **Bucksaw** is typically recognized through its ("H" or "C"-shaped frame) and a removable blade with coarse teeth held in tension by the frame. This type of saw has a metal blade of sharp serrated teeth and can typically cut through wood up to 6 inches in diameter in one direction. The most common versions seen in Scouting are lightweight portable or foldable models used for camping or back-packing.

A **bow saw** is a metal-framed saw in the shape of a bow with a coarse wide blade. This type of saw is also known as a **Swede saw** and is mistakenly called a buck saw. An easy way to recognize a bow saw is to check if there is a tension handle or lever. This type of saw has a metal blade of sharp serrated teeth and can typically cut through wood up to 6 inches in diameter in one direction.



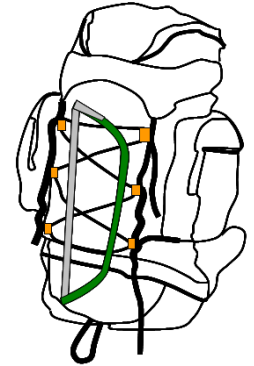
There are many types of bow saws - a useful style is the folding bow saw as it packs up into a small area - suitable for safe transportation

A **pocket knife saw** is a short 3 to 4 inch straight saw that has small teeth and is suitable for cutting through small branches up to one inch in width. Small pocket sized saws will not be discussed in this workshop.

## Transporting Saws

Where possible, all saws should be broken down into the smallest parts possible and packed within your backpack when you are on the move. Pocket knife saws are easy - keep the saw folded into the knife and transport the pocket knife in your backpack or in a sheath.

For Buck saws and Bow saws, if the saw can be broken down, ensure that the blade is wrapped in a protective sheath. The sheath should be non-biodegradable and be capable of resisting the sharp cut of the teeth - such as a plastic hose pipe or something similar. This will save your fingers being cut as you rummage through your backpack and tearing of the backpack material.



If the saw cannot be easily disassembled, then the following criteria should be observed:

1. The saw should be firmly hitched to the back of the backpack - not the side as the blade may interfere with walking motion of the person. The blade should not extend beneath the backpack. *(as illustrated)*
2. The blade should be wrapped in a protective sheath. The sheath should be non-biodegradable - such as a plastic hose pipe. This will protect the blade from the weather and your fingers when you untie the saw from your backpack.

## Assembling Your Saw

Assemble your Buck or Bow saw according to the instructions that are provided with the saw. If you are not sure, practice before you embark on your activity. A correctly assembled saw should meet the following requirements:

1. Correct blade type is selected and setup with the teeth facing the correct direction
2. Blade is placed under correct tension
3. Blade is sharp, rust free and lightly oiled as a protection against weather and friction of cutting action



## Safety Precautions when using the Saw



- Ensure that you have a suitable 1<sup>st</sup> Aid kit nearby as the nature of Buck Saw and Bow Saw injuries tend to be multiple tears in flesh which are often deep and messy and in the hand and finger areas.
- You should not begin sawing until you have setup a stable platform on which to cut. The stable platform can be one of several items as illustrated:

<p><b>Platform support for Sawing Position</b></p> <ol style="list-style-type: none"> <li>1. Create a supporting platform. This could be a single in an "X" shape using two logs. (Illustration #1), a flat platform such as a picnic table (Illustration #2), Saw horse (Illustration #3) or another log (Illustration #4)</li> <li>2. Hold the wood securely with the hand that is not holding the saw. Ensure that the platform and wood to be cut are secure.</li> <li>3. Position the wood such that you have enough clearance to cut the wood and not impact the supporting platform</li> <li>4. Ensure that you are comfortable with the cutting stance</li> </ol>			
<p>Illustration #1</p>	<p>Illustration #2</p>	<p>Illustration #3</p>	<p>Common method of parallel log for support</p> <p>Illustration #4</p>
<p><b>Hand Position for sawing</b></p> <ol style="list-style-type: none"> <li>5. Hold the wood securely with the hand that is not holding the saw.</li> <li>6. Ensure that the hand that is not cutting is positioned safely away from the saw. This will decrease the risk of a saw blade bouncing out from the cut and causing injury. A good guideline is to position the supporting hand behind the support (Illustration #5) or in the case where the supporting platform is another log (Illustration #4), at least 6 to 12 inches away from the saw blade.</li> </ol>			
<p>Illustration #5</p>	<p>Illustration #6</p>		
<p><b>Sawing motion</b></p>			
<p>Illustration #7</p>		<p>Hold wood firmly. Place saw on wood (Illustration #7) and then using the weight of the saw, slowly draw back wards the entire length of the saw. Gently push the saw forward again and then backwards, and then forwards until a groove is made in which the blade can sit without skidding loose.</p> <p>Always saw slowly at first. When the cut is deep enough to support the blade, increase blade pressure and speed.</p>	

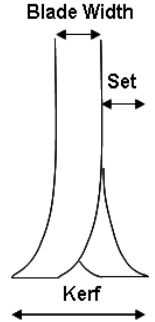


## What are Kerf, teeth and Pitch

'Kerf' is defined as the width of a groove made by a cutting tool, or more commonly referred to as the saw cut. The Kerf made from a saw is always wider than the thickness of the blade.

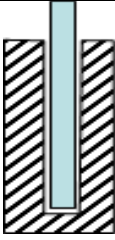
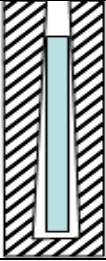



The teeth of a saw are bent outwards in both directions to make the Kerf and middle teeth are designed to carry away the debris from the cut.



The pitch of saw teeth is measured in teeth per inch (TPI). The fewer the teeth the more coarse the saw blade will be. If the wrong blade is used, the saw will not cut effectively and may jam. For cutting wood, you should have a coarse blade with a pitch of 4 to 7 teeth. This is suitable for both fresh green wood and seasoned hardwood.



Saw blade does not jam	Saw blade jams	Saw blade Jams
		
In this case the saw cut is straight and the saw blade easily slides in the groove	As the saw cuts deeper, if the wood leans into the cut, the Kerf closes and the saw blade may jam due to debris or lack of space.	If the user starts cutting at different angle after the initial groove is made, the saw blade may jam.

In the case of the Kerf closing when the saw cuts deeper, the blade may be freed by applying pressure against the part of the wood that is being severed (press downward when you are cutting downwards) and this will open up the wood cut. This is relatively simple if you are cutting downward, but not if you are cutting upwards or sideward's.

**Therefore, to maximize saw safety, use a saw with the correct pitch, saw straight and ensure that the wood does not close up on the blade.**

## Passing a Saw to someone else

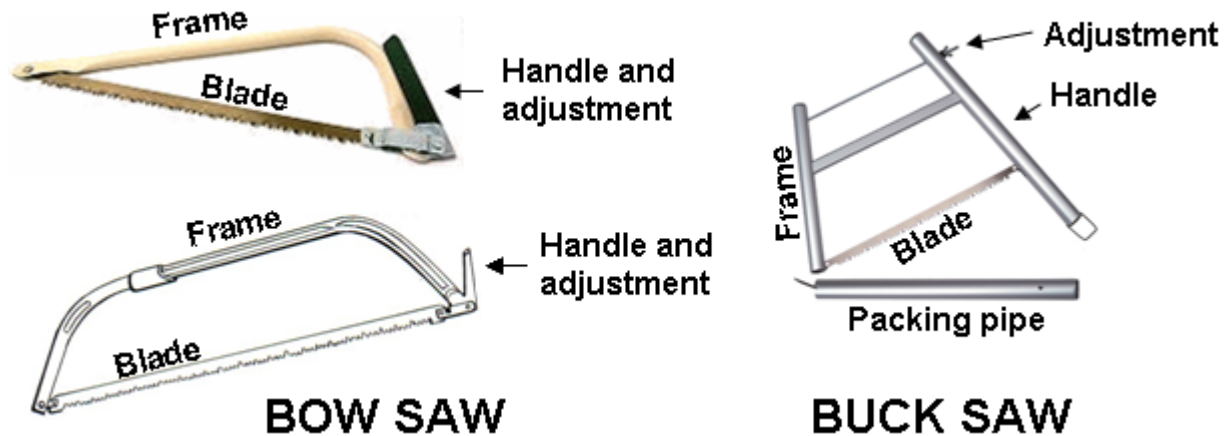
- If it's not convenient to disassemble the saw, always place a cover over the saw blade in order to avoid getting cut from the sharp teeth.
- Carry the saw with the blade parallel to the ground and the handle facing away from you. If you were to trip and fall, the saw will fall away from you out of harms way and you will avoid landing on it.
- When passing a saw to someone else, hold the saw with the handle facing the other person.
- Wait until the other person has acknowledged that they have the saw before letting it go.



## Care of a Saw

- Always clean the blade after use. This removes dirt and moisture which can cause rust. Keep the blade lightly when not in use. Avoid injuries; use a rag to wipe the blade clean, not your fingers.
- Ensure that the body parts of the saw are in good shape and that the saw can be assembled safely and the blade placed under secure tension.

## ILLUSTRATION OF SAWS



## PERMIT DEMONSTRATION

In the presence of your instructor, perform the following:

### Questions to be answered

1. State why a Saw is a good complementary tool with an axe or Hatchet
  - a. Saws can cut through thicker pieces of wood faster than an axe
  - b. Saws are lighter and may be packed up into a smaller space
  - c. Saws are much safer to use than an axe or hatchet
  - d. Saws do not need a large safety area
  - e. Saws cannot split wood or make kindling
2. Identify the parts of a saw
  - a. Handle, blade and frame
3. Identify three items on a saw that need to be inspected prior to use?
  - a. Frame is in good shape
  - b. Adjustment allows the blade to be put under tension
  - c. Saw Blade is correct type, sharp and not chipped
4. Why is it desirable to place a cover over the blade
  - a. Protects the blade from moisture
  - b. Protects the user and your gear when the saw is being carried in a backpack
5. What are the primary reasons for a saw to jam?
  - a. Incorrect teeth pitch for wood being cut
  - b. Cutting at wrong angle
  - c. Wood bends and jams blade
6. What equipment should always be present when chopping?
  - a. Suitable first aid kit

### Demonstration

1. Demonstrate that you can setup and tear down a saw and talk about what you are doing as you do this
2. Demonstrate the setup of a safe platform support for sawing
3. Demonstrate and describe the hand and body positions when you start to saw
4. Demonstrate how to make the initial saw cut
5. Demonstrate sawing through a 4 inch piece of firewood
6. Demonstrate what you would do to a saw when you have finished